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## CAUSES AND CONSEQUENCES OF PERCEIVED GOAL DIFFERENCES BETWEEN DEPARTMENTS WITHIN MANUFACTURING ORGANIZATIONS

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Differences between departments' perceptions of goals are assumed to impede interdepartmental coordination because they are often biased and therefore likely to be related to interdepartmental conflict. Results from a study in 11 manufacturing organizations among 120 employees in manufacturing, planning and marketing departments show that employees believed that they pursued goals that are valuable to the organization more strongly than other departments. Manufacturing and marketing employees perceived the largest goal differences with regard to their own department goals. Planning employees perceived the largest goal differences with the manufacturing department with regard to the goals of marketing, and with the marketing department with regard to manufacturing goals. This suggests that the 'boundaries' of the social identity of planning employees seem to change depending on which comparison is salient. The more an organization had an integrative strategy of competing on both low cost and high customer service, the smaller were some of the perceived goal differences. Furthermore, perceived goal differences were positively related to interdepartmental conflict frequency and seriousness. This study demonstrates the importance of reducing perceived goal differences, which can be achieved partly by interventions at the organizational level.

Organizations are purposeful in nature, pursuing goals such as profit maximization, survival, and benefit to society (Miller & Arnold, 1998). As organizations grow larger, the overall organizational goals have to be split up into several different subgoals and divided over organization divisions, units, departments and people. As soon as goals are distributed over different departments within the organization, the problem of coordination arises. Organizations face the difficult problem of how to coordinate the goals and activities of all their members in such a way that overall company goals, such as making a profit and guaranteeing survival, are met. This is a serious problem because the goals of different departments not only tend to be different, but can also be incompatible (John, 1991).

A lot of research and many interventions have been carried out on the question of how to solve coordination problems within organizations (e.g. Bazaraa & Jarvis, 1977; Burns & Stalker, 1966; Galbraith, 1973; Mintzberg, 1979; Ouchi, 1980; Walton & Lawrence, 1985). Examples of possible solutions to the coordination problem include changing the organizational climate in such a way that all members are focused on common objectives (Dahler-Larsen, 1998), introducing 'soft' human resource management (Beer, Spector, Lawrence, Mills, & Walton, 1984), developing performance control systems such as management by objectives (John 1991; Lawrence & Lorsch, 1967), and restructuring the organization from a functional to a process-oriented layout (Christopher, 1998; Majchrzak & Wang, 1996; Mintzberg, 1979). In fact, all these solutions share the same purpose: to make the organization perform as one well-integrated organism, in which all parts contribute to the overall goal of the organization.

Although it is widely acknowledged that the division of goals and tasks over different departments causes coordination problems, little research has been conducted on employees' perceptions of these goal differences. This is a serious limitation, because research on intergroup relations has shown that perceptions of intergroup differences, especially when they are biased, are one of the main sources of intergroup problems and conflicts (cf. Brewer, 1986; Brown, Condor, Matthews, Wade, & Williams, 1986; Fisher, 1990; Rubin, Pruitt, & Kim, 1994; Tajfel, 1970). We propose that perceptions of goal differences between departments can be a major source of interdepartmental coordination problems such as interdepartmental conflict because perceptions of goal differences often imply the belief that the respective group goals are incompatible as well. By studying this proposition, experimental research on intergroup relations and perceptions is applied to the field setting of interdepartmental coordination. Moreover, we will investigate not only the consequences of perceived goal differences in terms of interdepartmental conflict, but also some of their potential causes. The following research problem is addressed: are there differences between departments within organizations with regard to perceptions of their own goals and those of other departments? What are determinants of these perceived goal differences? And finally, what are the consequences of perceived goal differences in terms of interdepartmental conflict?

These research issues are examined in an organizational context which is well known for its coordination difficulties (Konijnendijk, 1994; Shapiro, 1977): we are focusing on perceived goal differences between manufacturing and planning departments as well as between planning and marketing departments.

### Perceived goal differences

Shapiro (1977) wondered whether departments responsible for manufacturing (back-office departments) and departments responsible for marketing (front-office departments) could ever coexist. There is a structural conflict between back-office and front-office departments. While back-office departments usually aim at cost reduction by producing efficiently, front-office departments usually aim at revenue maximization by adapting to customer demands. Front-office goals tend to disrupt a swift and even flow of operations processes and are therefore to some extent incompatible with back-office goals (cf. Argyris, 1964; John, 1991; McCann & Galbraith, 1981; Schmenner & Swink, 1998; Shapiro, 1977; Skinner, 1974). However, the integration of back-office and front-office goals is very important to meet the overall goal of the organization. As John (1991) wrote: 'If operating level decisions are guided by parochial rather than organization wide goals, the overall pattern will be inconsistent and counterproductive' (p. 213; see also Goldratt & Cox, 1993; McCann & Galbraith, 1981).

In this article, we examine two interfaces in which the structural conflict between the back and front office plays an important role: the interface between manufacturing and planning and the interface between planning and marketing.

An important goal of manufacturing departments is usually to produce high-quality products in efficient ways, an important goal of planning is usually to make efficient production schedules that guarantee quick and on-time delivery of products, and an important goal of marketing is usually to serve the customers by adapting flexibly to their demands and ensuring quick and on-time delivery (Nauta, De Dreu, & Van der Vaart, 2000). The role of planning is a special one, since planning represents the front office when dealing with manufacturing and the back office when dealing with marketing.

We assume that an important impediment to the effective coordination and integration of goals in the manufacturing-planning and in the planning-marketing interfaces is that employees of different departments tend to perceive larger goal differences than actually exist, due to

psychological processes. Social identity theory (Brewer, 1986; Brown, 1988; Fisher, 1990; Hogg & Terry, 2000; Sherif & Sherif, 1953; Tajfel, 1970; Tajfel & Turner, 1979; Turner & Giles, 1981; White, 1977) can explain this psychological tendency.

According to social identity theory, the mere awareness of being a member of one department and not other departments creates perceptions that favour one's own group and reject other groups to some extent (Brewer, 1986; Fisher, 1990; Sherif & Sherif, 1953; Tajfel & Turner, 1979). Social identity theory proposes that individuals partly define themselves in terms of their group membership. Moreover, they seek a positive social identity by distinguishing their own group positively from other groups. People tend to perceive members of their own group as 'good' and members of the other group as 'bad' (Tajfel, 1970; White, 1977). By doing so, they not only create positive social identities but also justify their own attitudes and behaviour towards other groups. A study by Brown et al. (1986) indeed showed that subgroups within an industrial organization tend to differentiate their own group positively from other groups, as each group believed that it contributed more strongly to the overall functioning of the organization than the other subgroups.

From social identity theory we derive the proposition that employees in organizations will simultaneously overestimate the degree to which they themselves pursue goals that are valuable to the organization and underestimate the degree to which members of other departments pursue these goals. Moreover, such perceived goal differences are likely to increase in situations of conflicting interests (Brown et al., 1986; De Dreu, Nauta, & Van de Vliert, 1995; Thompson & Loewenstein, 1992). In this study, we will examine the extent to which employees perceive goal differences between their own and other departments, possibly increasing coordination problems. The following hypothesis is therefore formulated:

Hypothesis 1: In both the manufacturing-planning and the planning-marketing interfaces, employees believe that they are striving harder to achieve goals that are valuable to the organization than the members of the other department.

Social psychological research on biased in-group-out-group perceptions usually focuses on one evaluative dimension and shows in general that people tend to see the in-group as better than the out-group. However, in the reality of organizations, it can be assumed that what counts as good and as bad is viewed differently by different departments, since they are rewarded for different goals. Manufacturing is usually rewarded for efficiency and quality, planning for delivering fast and on time, and marketing for flexibility and customer service (cf. Nauta et al., 2000; Slack, Chambers, Harland, Harrison, & Johnston, 1998). As a consequence, it is likely that the three departments differ in the degree to which they find the different department goals to be important. Research has shown that self-serving biases are largest on dimensions that people find most important (cf. Alicke, 1985). For these reasons, it is likely that perceived goal differences are largest for the goals that are ascribed to one's own department, and smallest for the goals ascribed to the other departments. We will test the following hypothesis:

Hypothesis 2: The belief of employees that they are striving harder to achieve goals that are valuable to the organization than the members of the other department is stronger when their own department goals are concerned than when the goals of the other department are concerned. This applies to both the manufacturing-planning and the planning--marketing interface.

### Causes of perceived goal differences

The organizational literature on resolving coordination problems can be viewed as descriptions of the organizational determinants of perceived goal differences. Various organizational characteristics, such as the type of strategy, structure, culture, manufacturing system and planning system, are all assumed to determine the degree of perceived goal differences. For example, it is likely that, in a functional structure with clear boundaries between manufacturing, planning and

marketing departments, perceived goal differences will be larger than in a process-oriented structure in which manufacturing, planning and marketing work together in a multifunctional order-processing team (cf. Christopher, 1998). We assume that these various organizational characteristics, such as structure, culture, and technology, are to some extent aligned with each other (cf. Chandler, 1962; Lawrence & Lorsch, 1967; Porter, 1980; Skinner, 1974; Smith & Reece, 1999; Thompson, 1967) and that they come together in the specific organizational strategy (Sparrow, 1994). As adherents of a contingency approach to organizations argue, there is--or should be--a 'fit' between strategy, structure, culture, and technology within an organization (Drazin & Van de Ven, 1985; Tosi & Slocum, 1984; Woodward, 1965). When assuming relationships between strategy, structure, culture and technology, it follows that strategy can be seen as an indicator of all other organizational aspects. We therefore examine the influence of organizational strategy on perceived goal differences.

The literature conceptualizes organizational strategy in many different ways (Mintzberg, Ahlstrand, & Lampel, 1998): e.g. strategy as the planning of activities (e.g. Johnson & Scholes, 1988), strategy as the vision of management (e.g. Westley & Mintzberg, 1991), or strategy as an organizational course recognized after the fact, deduced from its apparent actions (Weick, 1979). In this article, the strategy of an organization refers to the major distinctive competencies of the organization: that is, the aspects with which an organization attracts its customers and competes with other organizations, e.g. offering low prices or offering a high customer service (cf. Bowman & Asch, 1996; Miller & Roth, 1994; Porter, 1980, 1985; Skinner, 1974; Wheelwright, 1984). We assume that the distinctive competencies of an organization determine--and resemble to a large extent--the content of its structure, culture and technology. Furthermore, since corporations seldom have only one strategy, we focus on strategy at the level of the plant: that is, a medium-sized manufacturing unit at one physical location in which a range of products are made and sold.

Depending on the market in which organizations operate, two extreme types of organizational strategies can be found. At one extreme, there are organizations that compete solely based on low cost, whereas, at the other extreme, there are organizations competing based on high customer service (cf. Porter, 1980, 1985; Smith & Reece, 1999). Organizations with a low cost strategy operate in markets in which customers demand large volumes of products in low variety, whereas organizations with a high customer service strategy operate in the opposite type of markets: low volume/high variety (Slack et al., 1998).

A low cost strategy implies that manufacturing and planning functions play a dominant role, for these functions emphasize low cost, high efficiency and standardization (cf. Peelen, Van Goor, & Den Breejen, 1991). A high customer service strategy implies that the marketing function is dominant, for marketing emphasizes high customer service, high revenues, and differentiation (Peelen et al., 1991; Porter, 1980, 1985). Both strategies imply that priority is given to one goal above the other goal. Having clear priorities is to some extent an advantage: it gives clear guidelines for the design of various organizational parts. However, the disadvantage of clear priorities is that business opportunities that do not fit into these priorities are easily neglected. Companies competing on low cost are likely to miss opportunities to serve the customer better, whereas companies competing on high customer service run the risk of ever-increasing costs. Therefore, organizations may benefit from having an integrative strategy (Follett, Metcalf, & Urwick, 1941), which means that companies compete based on low cost and high customer service simultaneously (Pino & Van't Eind, 1990; Porter, 1980, 1985). The concept of 'mass customization' (Gilmore & Pine, 1997), in which companies attempt to provide unique value to customers at a relatively low cost, fits well into an integrative strategy.

An integrative strategy implies that low cost and high customer service are equally important. The organization constantly assesses how to adapt to customer demands while achieving low cost,

high quality and high delivery performance simultaneously. In this situation, departments are likely to be equally powerful and highly interdependent, for they have to make decisions in which their respective goals are integrated. Hence, employees must look further than the boundaries of their department to consider the consequences of their decisions for the goals of other departments (cf. Parker, Wall, & Jackson, 1999). This requires flexible and well-integrated organizational processes and structures, in which perceived goal differences between departments are minimized. The following hypothesis is therefore formulated:

Hypothesis 3: The more the organizational strategy is characterized by a combination of high customer service and low cost, the smaller the differences between departments in perceptions of their own goals and those of other departments.

### Consequences of perceived goal differences

As mentioned earlier, effective coordination of the different departments' goals is crucial for organizational performance. However, many problems may arise that hinder coordination. Many of these coordination problems can be viewed as conflicts or dilemmas, in which one target, such as flexibility, is met at the expense of another target, such as efficiency (cf. John, 1991; Shapiro, 1977). To achieve effective coordination, therefore, it is important for organizations to manage conflicts between the goals of different departments. Although conflict issues are not in themselves detrimental to organizational effectiveness (De Dreu & Van de Vliert, 1997), it is important to manage them effectively to ensure positive outcomes for the organization as a whole. Hence, to some extent, the frequency and seriousness of conflicts in the manufacturing-planning and planning-marketing interfaces must be managed in order to keep their intensity at an optimal level (De Dreu, 1997).

Intergroup conflicts are well-known consequences of perceived goal differences as described above. For example, marketing employees who believe strongly that while they are aiming at customer service, their colleagues from planning are not, will approach their planning colleagues with suspicion and will interpret many of their actions and decisions as evidence that they do not care about serving the customer. The relationship between perceived goal differences and conflict is even more complex, because it is reciprocal and becomes easily entrapped in a downward spiral, in which perceiving goal differences increases conflict, which furthers the perception of goal differences, and so on (Rubin et al., 1994). For example, the marketing employee who argues with a planning colleague who refuses a customer order perceives this refusal as further evidence that the planning employee does not care for the customer, which increases perceived goal differences with planning and therefore the consequential likelihood of conflicts.

In this study, we examine to what extent there is a relationship between perceived goal differences and conflict (frequency and seriousness) within organizations. Our study contributes to existing knowledge because we examine perceived goal differences and their consequences in relation to actual department goals. The following hypothesis is formulated:

Hypothesis 4: The more perceived goal differences between departments, the more frequent (Hypothesis 4a) and serious (Hypothesis 4b) the conflicts between departments.

### Method

#### Sample

Eleven Dutch manufacturing plants in the semi-process industry participated in the study. The plants had a minimum of 70 and a maximum of 1000 employees ( $M = 286$ ;  $SD = 299$ ). Only one of the 11 plants was an autonomous organization. The remaining 10 plants were semi-autonomous parts of 10 different (multinational) corporations. All plants had manufacturing,

planning and marketing departments at the same physical location.

Overall, 41 managers and 120 low-level employees were interviewed. All managers were male. Their average age was 48 and 95% of them had a college degree. They had worked at the plant for 12 years on average and in the current position for 6 years on average. Of the low-level employees, 73% were male. Their average age was 38 years and 25% had a college degree. They had worked in the current plant for 15 years on average, and in the current position for 7 years on average. Of the 120 low-level employees, 35 (29%) worked in the manufacturing department, 41 (34%) in the planning department, and 44 (37%) in the marketing department.

## Procedure

Organizations were recruited via the network of (colleagues of) the first author, using phone calls, informational flyers about the research subject and oral presentations to promote the research. During initial conversations with one or more contact persons (usually the planning manager and/or the marketing manager) of a participating organization, agreements were made about which employees would be interviewed. Within each organization, the management level employees to be interviewed consisted of the manufacturing manager, the planning manager (if this position existed), the marketing manager and the general director. The low-level employees consisted of all employees working at the lowest hierarchical level in the areas of manufacturing, planning, and marketing. The first author interviewed all 41 managers, using structured interview schemes. Two interviewers, including the first author, interviewed all 85 low-level employees. The managers answered questions about organizational strategy. The low-level employees were questioned about their own goals and the goals of their neighbouring department, as well as about the frequency and the seriousness of their conflicts of interests with the other department. At first, we planned to collect data in all possible interfaces (i.e. manufacturing-planning, planning-marketing, and manufacturing-marketing). However, it appeared that most manufacturing employees did not directly deal with marketing employees, and vice versa. Instead, all task-oriented communication between manufacturing and marketing went via planning. Therefore, the manufacturing-marketing interface was not considered any further.

## Measurements

**Own and others' goals.** In the literature on operations management, which deals with the daily business of how to control manufacturing processes, there is general consensus that there are six major goals that all manufacturing organizations strive for (e.g. Slack et al., 1998). These are efficiency, quality, delivery speed, delivery reliability, flexibility, and customer service. With regard to these six goals, we measured the extent to which employees found themselves as well as their colleagues from other departments to be aiming for each goal. The six goals were explained to the participants as follows: efficiency was defined as minimizing costs; quality as making good products; delivery time as delivering fast; delivery reliability as delivering on time; flexibility as delivering a variety of products, quantities, and delivery times; and finally, customer service was defined as offering services to the customer such as product information. To measure their own goals, they were asked the following question: 'For each of the goals, can you indicate the degree to which you are actually aiming for it? This may be, for example, because the goal is part of your job, because you are rewarded for achieving it, or because you believe the goal to be important for another reason.' Answers on every goal ranged from 1 ('I am certainly not aiming for it') to 5 ('I am certainly aiming for it'). To measure their perceptions of others' goals, they were asked the following: 'For every goal, can you indicate the degree to which manufacturing (or planning, or marketing) employees are actually aiming for it? We are not interested in goals that they should aim for, but in goals that you watch them striving for in reality.' Answers on every goal ranged from 1 ('They are certainly not aiming for it') to 5 ('They are certainly aiming for it').

The goals of delivery time and delivery reliability were averaged into one goal and labelled as delivery performance because of the high correlations on both self-measurements ( $r = .68$ ;  $N = 120$ ;  $p < .001$ ) and other-measurements in the manufacturing--planning interface as well as in the planning--marketing interface ( $r = .83$ ;  $N = 71$ ;  $p < .001$  and  $r = .59$ ;  $N = 83$ ;  $p < .001$  respectively). Hence, five goals remained; efficiency, quality, delivery performance, flexibility, and customer service. Finally, indices for perceived goal differences were created by subtracting the five others' goals from the five self-reported goals.

Organizational strategy. First it was explained to the 41 managers of the 11 companies that there are six performance dimensions (comparable to the goals described above) that customers find more or less important: price, quality, delivery time, delivery reliability, flexibility, and customer service. The definitions of these dimensions (see above) were also given. We used managers' perceptions of how important their customers found the various performance dimensions as an indicator of organizational strategy: e.g. an organization in which the managers believed that price was very important to the customers was believed to focus on low cost. Thus, managers were asked to rate the degree to which they believed their customers found the performance dimensions important. Answers ranged from 1, very unimportant, to 5, very important. Factor analysis of the six performance dimensions revealed two factors with eigenvalues above 1.0, which together explained 66% of the variance. Four performance dimensions loaded high ( $> |.70|$ ) on factor one and low ( $< |.40|$ ) on factor two: quality, delivery time, delivery reliability, and customer service (see Appendix 1 for the precise factor loadings). These dimensions were averaged into one measure labelled 'high customer service strategy' (Cronbach's  $\alpha = .82$ ;  $N = 40$ ). Only one performance dimension, price, loaded low on factor one and high on factor two. This item was labelled 'low cost strategy'. The two strategy measures were relatively independent ( $r = .13$ ;  $N = 40$ , n.s.). Within each organization, the standard deviations of both strategy measures were low enough to justify aggregation of the answers of managers to the organizational level (low cost strategy:  $SD < .85$  for 10 of the 12 organizations; one organization had  $SD = 1.04$ , another organization had  $SD = 1.56$ ; customer service strategy:  $SD < .95$  for all organizations). The cross-product of the two centred strategy measures was used as a measure of integrative strategy, i.e. combining a low cost strategy with a high customer service strategy.

Frequency and seriousness of conflicts. To measure the frequency and seriousness of conflicts of interests between the respondents' own and other departments, employees were first asked to describe an example of opposing interests between themselves and an employee of the other department, about which they had spoken with each other. It was stressed that the example should represent how things were generally going between themselves and employees of the other department. Employees gave examples such as the following: 'Marketing does not grasp how much work they saddle us with when they come up with a rush order', 'Efficiency is very important for planning and this conflicts with rush orders', 'Marketing sometimes promises things to customers that are not feasible', 'Planning wants to schedule large batch sizes, whereas marketing prefers small ones', 'Sometimes marketing does not take costs into account; they order new packaging while the old ones are far from out of stock', 'Marketing forces us to use inefficient set-ups of the machines', and 'Marketing often gives orders which, in terms of their format, run inefficiently on the machines'. Subsequently, the following question was asked to measure conflict frequency: 'How often do these kind of conversations occur?' Answers ranged from 1, almost never, to 5, several times a day. To measure conflict seriousness, employees were asked: 'How serious do you find it that these types of opposing interests exist between you and the manufacturing (planning, marketing) employees, in the sense that you feel obstructed by them?' Answers ranged from 1, certainly not serious, to 5, certainly serious.

## Results



We performed two multivariate analyses of variance, one for the manufacturing--planning interface and one for the planning--marketing interface. In the manufacturing--planning interface (see Fig. 1), the factorial design was  $2 \times 5 \times 2$  (Department: Manufacturing vs. Planning x Goal: Efficiency, Quality, Delivery, Flexibility, Customer Service x Target of Judgment: Self vs. Average member of the other department). The type of department varied among participants, and goal as well as target of judgment varied within participants. The dependent variable was the degree to which one actually aimed at the goal: 1 ('I am/the others are certainly not aiming at this goal') to 5 ('I am/the others are certainly aiming at this goal'). The same factorial design was used in the planning--marketing interface, except that the factor department now consisted of planning versus marketing.

**Manufacturing-planning interface.** The multivariate analysis of variance revealed a main effect of 'goal' ( $F(4,62) = 10.03$ ;  $p < .001$ ), showing that goals differed in importance. Averaged across department and target of judgment, it appeared that, in the manufacturing--planning interface, delivery ( $M = 4.26$ ) and efficiency ( $M = 4.24$ ) were found most important, followed by quality ( $M = 4.11$ ), flexibility ( $M = 3.81$ ) and customer service ( $M = 3.51$ ). There was also a general effect regarding the target of judgment ( $F(1,65) = 42.56$ ;  $p < .001$ ), showing that ratings for employees themselves were, on average, higher than those for members of the other department ( $M = 4.29$  vs.  $M = 3.68$ ). This last finding supports Hypothesis 1, that employees believe that they are striving harder to achieve goals that are valuable to the organization than the members of the other department. The main effect of goal was qualified by the interaction of Goal x Department ( $F(4,62) = 4.31$ ;  $p < .005$ ), showing that different goals are aimed at in different departments. Manufacturing employees aim most strongly at efficiency and quality, whereas planning employees aim most strongly at delivery performance. Finally, the three-way interaction of Goal x Target of Judgment x Department was significant ( $F(4,62) = 23.59$ ;  $p < .001$ ). As can be seen in Fig. 1, manufacturing employees believe most strongly that they are striving harder for goal achievement than the other department when efficiency and quality are concerned, whereas planning employees believe most strongly that they are striving harder than the other department when delivery performance and customer service are concerned. This partly supports Hypothesis 2, in which it was expected that perceived goal differences are largest in favour of oneself when one's own department goals are concerned. Hypothesis 2 was supported among manufacturing employees. However, among planning employees, the perceived goal difference was not only very large when their own department goal, delivery performance, was concerned, but also when one of the two marketing goals, customer service, was concerned.

**Planning--marketing interface.** At the planning--marketing interface (see Fig. 2), there was a main effect of goal ( $F(4,75) = 13.29$ ;  $p < .001$ ). Averaged across department and target of judgment, it appeared that delivery performance was found most important ( $M = 4.48$ ), followed by customer service ( $M = 4.21$ ), quality ( $M = 4.07$ ), flexibility ( $M = 4.06$ ), and finally efficiency ( $M = 3.76$ ). There was also a main effect of the target of judgment ( $F(1,78) = 48.94$ ;  $p < .001$ ), showing that ratings for oneself were, on average, higher than those for members of the other department ( $M = 4.41$  vs.  $M = 3.82$ ). Again, Hypothesis 1, in which it was expected that employees overstate their own goal pursuit by believing that they are striving harder to achieve goals than the members of the other department do, received support. The main effect of goal was qualified by the interaction of Goal x Department ( $F(4,75) = 3.14$ ;  $p < .05$ ), which means that different goals are aimed for in different departments. Planning employees aim most strongly for delivery performance, whereas marketing employees aim most strongly for both customer service and delivery performance. There was also an interaction effect of Goal x Target of Judgment ( $F(4,75) = 3.57$ ;  $p < .05$ ), showing that perceived goal differences are somewhat stronger for some goals than for others.

Finally, the three-way interaction of Goal x Target of Judgment x Department was significant ( $F(4,75) = 13.05$ ;  $p < .001$ ). As can be seen in Fig. 2, planning employees believe most strongly that they strive harder to achieve goals than the other department where efficiency and quality are concerned, whereas marketing employees most strongly believe that they strive harder than the other department where customer service and flexibility are concerned. This partly supports Hypothesis 2, in which it was expected that perceived goal differences are largest in favour of oneself when one's own department goals are concerned. Hypothesis 2 received support among marketing employees, but, again, not among planning employees. The latter perceived the largest goal difference where manufacturing goals, efficiency and quality, were concerned.

### Causes of perceived goal differences

Indices were created for perceived goal differences by subtracting others' goals from self-reported goals. To test Hypothesis 3, that an integrative organizational strategy leads to smaller perceived differences between employees' own and other departments' goals, Spearman rank correlations were computed between low cost strategy, high customer service strategy, and integrative strategy on the one hand, and departmental averages of perceived goal differences on the other hand ( $N = 11$  organizations; see Table 1).

**Manufacturing--planning interface.** Within the manufacturing-planning interface, Hypothesis 3 was partly supported. An integrative strategy--that is, one that combines low cost and high customer service strategies--had a significant negative correlation with perceived goal differences in flexibility. Three of the four other correlations in relation to integrative strategy were also negative, although not significantly so. Moreover, in line with Hypothesis 3, it appeared that a high customer service strategy was positively related to perceived goal differences in efficiency and quality. Unexpectedly, it appeared that a low cost strategy was related negatively to perceived goal differences in flexibility and customer service within the manufacturing--planning interface.

**Planning--marketing interface.** Within the planning--marketing interface, Hypothesis 3 also received some support. The results reveal a significant negative correlation between integrative strategy and perceived goal differences in delivery performance. Two of the five correlations between integrative strategy and perceived goal differences were negative. Hypothesis 3 thus received a small amount of support at the planning--marketing interface. Furthermore, neither low cost nor high customer service strategy were correlated with perceived goal differences, with the exception of an unexpected significant negative correlation between low cost strategy and perceived goal differences in delivery performance.

### Consequences of perceived goal differences

Hypothesis 4 concerns the relationship between perceived goal differences and conflict frequency (Hypothesis 4a) and the seriousness of the conflicts (Hypothesis 4b). These hypotheses were tested using multi-level analysis. Following a multilevel approach means that the analysis takes into account the hierarchical data structures (employees within organizations) by using a hierarchical linear model (Bryk & Raudenbush, 1992; Goldstein, 1995; Kreft & De Leeuw, 1998; Raudenbush & Bryk, 1986; Snijders & Bosker, 1999). The hierarchical linear model is a statistical model for hierarchically structured data that takes into account within-group variability as well as between-groups variability. It is similar to a regression model but in addition includes random effects to represent the unexplained differences between groups: in this case, organizations. Using ordinary least squares regression analysis would lead to unreliable results because employees within the same organization have common influences, so that the assumption of independent observations, required for ordinary regression analysis, would be violated (Bryk & Raudenbush, 1992).

In multi-level analysis, the variance in the dependent variable is divided into variance that can be accounted for by the organizational level--in this case the integrative strategy--and variance that can be accounted for by individual variables--in this case the perceived differences of the five goals. Fixed effects are entered into the model on the basis of theoretical considerations, as in multiple regression analysis. In addition, we estimated random effects at the level of the organization: we assumed that organizations differ randomly in their overall level on the dependent variable, and we allowed that organizations differ randomly in the regression coefficients of the variables on the level of the employees (random slopes). In this study, the presentation of results focuses on fixed effects. According to the hypotheses, most attention is paid to the fixed effects of the perceived goal differences on the individual level, while controlling for the integrative strategy of the organization at the level of the organization. Multivariate significance of effects was tested by computing the increase in model fit compared with the previous step. The increase in model fit (represented by the decrease in deviance) follows a chi-square distribution, with the number of added predictor variables as the degree of freedom (Goldstein, 1995). The fixed effects of single predictor variables are comparable with regression coefficients in ordinary regression analysis. These were tested by means of one-side z tests to the ratio 'estimate/standard error'. The MLwiN program was used (Goldstein et al., 1998).

The dependent variables in these multi-level analyses were the frequency and seriousness of conflicts as reported by the employees, separately for the two interfaces. For each dependent variable, two analyses were conducted. In the first analysis (model 1) the perceived goal differences were included, and in the second analysis (model 2) the integrative strategy of the organization was added. As said before, attention is paid to the effects of the perceived goal differences, while controlling for the organizational strategy (that is, the second model). The results of the multi-level analyses are presented in Table 2.

For the manufacturing-planning interface, the results show that the integrative strategy of the organization contributed significantly to the explanation of the frequency and seriousness of conflicts (difference in deviance from the first model respectively 4.04(1),  $p < .05$ , and 3.95(1),  $p < .05$ ). For the planning--marketing interface, the integrative strategy contributed significantly to the explanation of the seriousness of conflicts, but not significantly to the explanation of the frequency of conflicts (difference in deviance from the first model respectively 2.81(1),  $p < .10$ , and 2.37(1), n.s.). Furthermore, with the exception of the seriousness of conflicts in the manufacturing--planning interface, an integrative strategy within an organization had a significant negative effect on the frequency and seriousness of conflicts. Conflicts were less frequent and less serious in organizations that had a 'low cost and high customer service' strategy.

Within the manufacturing--planning interface, controlling for the integrative strategy of an organization, perceived goal differences with regard to quality and delivery were significantly positively related to the frequency of conflicts: the higher the perceived differences in quality and delivery goals, the more conflicts employees reported. Regarding the seriousness of conflicts within this interface, only perceived goal differences with regard to flexibility had a significant positive relationship with the seriousness of conflicts.

Within the planning-marketing interface, controlling for the integrative strategy of an organization, perceived goal differences with regard to efficiency, delivery, flexibility and customer service were all significantly positively related to conflict frequency. Furthermore, perceived goal differences with regard to efficiency, delivery and customer service had significant positive relationships with the seriousness of conflicts.

On the basis of these results, it can be concluded that Hypothesis 4, that perceived goal differences are related to conflict frequency (Hypothesis 4a) and seriousness (Hypothesis 4b) was

partially supported, and that this support was stronger within the planning--marketing interface than within the manufacturing--planning interface.

It is also relevant to consider the effects of individual characteristics of employees, such as age, education, sex and years of experience. For this reason, the relationships between perceived goal differences and the frequency and seriousness of conflicts were examined, controlling for characteristics of the employees. For the manufacturing--planning interface, including these variables in the multi-level models shown in Table 2 produced no significant improvement of the fit of the models (no table). In addition, we did not find any significant effects of the individual characteristics of the employees on the frequency and seriousness of the conflicts.

For the planning-marketing interface, however, the addition of the individual characteristics--age, education, sex and years of experience--improved the fit of the models significantly (for frequency: difference in deviance = 7.21(4),  $p < .01$ ; for seriousness: difference in deviance = 5.78(4),  $p < .01$ ). A significant positive effect of education was found with regard to the frequency of conflicts (coefficient = .46,  $p < .01$ ): controlling for perceived goal differences and the integrative strategy of the organization, the higher the education of an employee, the more conflicts the employee had. A significant negative effect of education was found with regard to the seriousness of the conflicts (coefficient = -.56,  $p < .01$ ): controlling for perceived goal differences and the integrative strategy of the organization, the higher the education of an employee, the less serious the conflicts the employee had. Most important, however, is the question of whether by adding the individual characteristics to the models, the effects of the perceived goal differences on frequency and seriousness of the conflict changed. We found that this was not the case for any of the models. This means that our conclusion is upheld: Hypothesis 4a and Hypothesis 4b are partially supported, more so for the planning-marketing interface than for the manufacturing-planning interface.

## Discussion

In this article, we examined perceived goal differences in the manufacturing--planning and the planning--marketing interfaces as well as their causes in terms of the overall organizational strategy and their consequences for coordination problems such as the frequency and seriousness of interdepartmental conflicts. The results of the current study showed, first, that employees indeed perceived interdepartmental goal differences. Secondly, some of these perceived goal differences appeared to be smaller the more an organization had an integrative strategy (low cost combined with high customer service). Thirdly, some of the perceived goal differences tended to increase the frequency and seriousness of interdepartmental conflicts.

Our finding that people in organizations tend to perceive goal differences between themselves and members of other interdependent departments can be interpreted in two different ways. On the one hand, the perceived goal differences may refer to actual goal differences, because different departments are actually rewarded for different goals. On the other hand, perceptions of goal differences may be biased, in that employees believe that they are aiming more strongly at goals that are valuable to the organization than are the members of the other department. The results of the current study demonstrate that perceived goal differences were indeed somewhat favourably biased. Employees believed that they pursued their 'own' department's goals more strongly than employees of other departments did (which can be labelled as perceiving a 'realistic, non-biased' goal difference), but employees also believed that other departments did not pursue 'their' department goals more strongly than they themselves did (which can be labelled as perceiving a biased goal difference). These results support social identity theory (e.g. Brewer, 1986; Hogg & Terry, 2000), in that department members strive for a positive social identity by believing that they are striving for goals that are valuable to the organization, whereas they believe that members of other departments strive less than they do for goals that are valuable to the

organization.

The perceived goal differences demonstrated in the current study were less strong than expected. Possible reasons for this are that organizational goals were not clearly communicated by the managers down to the level of the employees, or that employees at the bottom of the hierarchy did not identify with the manager of their department. Another possible explanation is that group boundaries are not equal to the boundaries of departments, which implies that members of other departments may not always be seen as out-group members. As Hogg and Terry (2000) propose, it is not immediately clear what kind of group boundaries and group identity are most salient to organization members--those of the department, of their demographic characteristics, of the organization as a whole, or something else. Future research, therefore, may benefit from measuring employees' perceptions of group boundaries, as social identity theory proposes that the more employees perceive boundaries between their own department and other departments, the more likely they will have biased in-group and out-group perceptions.

Our hypothesis that perceived goal differences are largest where one's own department goals are concerned was supported among manufacturing and marketing employees, but not among planning employees. As expected, manufacturing employees perceived the largest goal differences with planning when efficiency and quality were concerned; marketing employees perceived the largest goal differences with planning when flexibility and customer service were concerned. Contrary to our expectation, however, planning employees perceived the largest goal differences with manufacturing not only where their own goal, delivery performance, was concerned, but also where customer service was concerned. Planning employees perceived the largest goal differences with marketing where efficiency and quality were concerned. These results suggest that planning, being in between the other two departments, feels closer to marketing when comparing itself to manufacturing, but closer to manufacturing when comparing itself to marketing. The 'boundaries' of the social identity of planning employees thus seems to change depending on which comparison is salient (cf. Hogg & Terry, 2000).

A limitation of this study was that we did not measure employees' perceptions of the importance of all six goals with regard to their contribution to overall organizational performance. It is plausible that manufacturing employees believe that efficiency and quality are most valuable for organizational performance, whereas planning employees believe that delivery performance is most valuable and marketing employees believe that flexibility and customer service are most valuable. Brown et al. (1986) indeed showed that employees of different departments within an organization all believed that their own department contributed the most to the overall functioning of the organization. By examining assessments of goal importance made by employees of different departments, more insight will be reached, not only in the kinds of biased perceptions employees have, but also in explaining the occurrence of interdepartmental conflicts.

The hypothesis that an integrative organizational strategy, which combines low cost and high customer service, reduces perceived goal differences between departments received weak support. This may be due to methodological problems, such as the small sample of organizations in our study. However, some significant negative relationships between integrative strategy measured at the management level and perceived goal differences measured at the operational level could be demonstrated, and these results could not be attributed to common method variance since measurements of strategy and perceived goal differences stemmed from two distinct sources. Our results thus suggest that organizational strategy may indeed serve as an important determinant of perceived goal differences. It would be interesting, therefore, to examine whether our findings can be replicated in future research using larger samples of organizations.

However, even at this early stage our results raise an interesting issue that questions work in the field of strategy management (cf. Porter, 1980, 1985). Authors in this field generally stress the

importance of having a clear organizational strategy and clear priorities, often formulated in slogans such as 'let's serve our customers better'. This study reveals the dark side of such presumed goal clarity: it seems to increase perceived goal differences between departments and, as a result, conflicts of interest, because a clear strategy often means that one goal, e.g. low cost, is given priority above other goals, e.g. customer service. Giving low cost priority above customer service means that the interests of back-office departments that strive for low cost are generally considered more important than the interests of front-office departments that strive for high customer service. Conversely, when customer service has priority above low cost, the interests of the front-office departments will be considered more important than those of the back office. Only when low cost is given equal weight with high customer service will the back and front offices have equal power and be able to trade off and solve problems constantly on the best possible integration of low cost and customer service. Therefore, structural conflicts of interests and interdepartmental differentiation will be smallest in organizations with an integrative strategy. Indeed, a study by Brown et al. (1986) has shown that intergroup differentiation is larger the more there are structural conflicts of interests.

Our hypothesis that perceived goal differences are related to the frequency and seriousness of interdepartmental conflicts was partly supported. We were able to replicate findings from social-psychological experimental studies on intergroup conflict in the field of interdepartmental coordination within organizations. Moreover, our study reveals that some perceived goal differences have larger effects on coordination problems than others do. Specifically, it appeared that perceived goal differences on marketing goals, such as delivery performance, flexibility and customer service, are related more strongly to interdepartmental conflict frequency and seriousness than perceived goal differences on manufacturing goals, such as efficiency and quality. An explanation for this finding is that marketing goals are often more complex and ambiguous than manufacturing goals. Efficiency and quality targets are usually easy to quantify and measure, whereas delivery, flexibility and customer service targets can be interpreted in a number of ways. As a result, efficiency and quality are less likely to be sources of conflict than customer service and flexibility because members of different departments may have equal definitions of what high efficiency and high quality mean, whereas their definitions of high flexibility and high customer service may differ much more. For example, a planning employee may define high customer service as delivering products as fast as possible, whereas a customer service employee may define high customer service as giving extra services and handling complaints satisfactorily. Therefore, marketing goals might be more likely sources of conflicts than manufacturing goals.

In sum, our study reveals that perceived goal differences between organizational departments deserve the continuous attention of both researchers and practitioners, for they appear to be an important impediment to the functioning of organizations as single integrated wholes. Therefore, practitioners have to work hard to influence perceived goal differences, e.g. by means of management by objectives (John, 1991; Lawrence & Lorsch, 1967), job rotation (Herzberg, 1968), training and education in taking the perspective of other departments (Galinsky, 1999), and other means to increasing mutual understanding and decreasing intergroup differentiation. Finally, our results suggest how perceived goal differences can be diminished in a structural, conditional sense: at the plant level, attention should be paid to the integration of goals in the formulation of organizational strategy.

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Table 1. Spearman rank correlations of organizational strategies and perceived goal differences  
(N = 11 organizations)

Legend for Chart:

B - Interface Manufacturing-Planning Organizational strategy  
Low cost

C - Interface Manufacturing-Planning Organizational strategy  
High CS

D - Interface Manufacturing-Planning Organizational strategy  
Both

E - Interface Planning-Marketing Organizational strategy  
Low Cost

F - Interface Planning-Marketing Organizational strategy  
High CS

G - Interface Planning-Marketing Organizational strategy  
Both

A	B	C	D
	E	F	G
Perceived goal difference			
Efficiency	.06	.66(*)	-.35
	.12	-.37	.02
Quality	.22	.73(**)	.12
	.06	.11	.23
Delivery	-.04	.11	-.10
	-.50(A)	.05	-.77(**)
Flexibility	-.54(*)	.16	-.69(**)
	.09	-.02	-.22
Customer service	-.61(*)	-.39	-.16
	-.05	.06	.34

(A)  $p < .10$ ; (\*)  $p < .05$ ; (\*\*)  $p < .01$  (one-tailed).

Key. CS = customer service; Both = both low cost and high customer service strategy (=integrative strategy).

Table 2.

Results of a regression comparison with conflict frequency and seriousness of the conflict as dependent variables (multi-level analysis), at both the manufacturing-planning interface and the planning-marketing interface

Legend for Chart:

- A - Model
- B - Interface Manufacturing-Planning Conflict Frequency 1
- C - Interface Manufacturing-Planning Conflict Frequency 2
- D - Interface Manufacturing-Planning Conflict Seriousness 1
- E - Interface Manufacturing-Planning Conflict Seriousness 2
- F - Interface Planning-Marketing Conflict Frequency 1
- G - Interface Planning-Marketing Conflict Frequency 2
- H - Interface Planning-Marketing Conflict Seriousness 1
- I - Interface Planning-Marketing Conflict Seriousness 2

A	B	C	D
	E	F	G
		H	I
Integrative strategy		-.09(*)	
	-.24		-.08(*)
			-.40(*)
Perceived goal difference			
Efficiency	.05	.06	.01
	-.09	.07	.11(*)
		.25(*)	.12(*)
Quality	.10	.14(*)	-.01
	-.08	.08	-.08
		-.04	-.02
Delivery	.06	.21(*)	-.23
	-.07	.24(*)	.24(*)
		.42(*)	.41(*)
Flexibility	.06	.03	.33(*)
	.28(*)	.08	.07(*)
		-.07	.01



GRAPHS: Figure 1. Mean pursuance of manufacturing, planning, and marketing goals as a function of department and target of judgment, at the manufacturing-planning interface.

GRAPHS: Figure 2. Mean pursuance of manufacturing, planning, and marketing goals as a function of department and target of judgment, at the planning-marketing interface.

## References

Alicke, M. D. (1985). Global self-evaluation as determined by the desirability and controllability of trait adjectives. *Journal of Personality and Social Psychology*, 49, 1621-1630.

Argyris, C. (1964). *Integrating the individual and the organization*. New York: Wiley.

Bazaraa, M., & Jarvis, J. (1977). *Linear programming and network florals*. New York: Wiley.

Beer, M., Spector, B., Lawrence, P. R., Mills, D. Q., & Walton, R. E. (1984). *Managing human assets*. New York: Free Press.

Bowman, C., & Asch, D. (1996). *Managing strategy*. Basingstoke: Macmillan Business.

Brewer, M. B. (1986). The role of ethnocentrism in intergroup conflict. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 88-102). Chicago, IL: Nelson-Hall.

Brown, R. J. (1988). *Group processes: Dynamics within and between groups*. Oxford: Blackwell.

Brown, R. J., Condor, S., Mathews, A., Wade, G., & Williams, J. A. (1986). Explaining intergroup differentiation in an industrial organization. *Journal of Occupational Psychology*, 59, 273-286.

Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models: Applications and data analysis*. London: Sage.

Burns, T., & Stalker, G. (1966). *The management of innovation* (2nd ed.). London: Tavistock.

Chandler, A. D. (1962). *Strategy and structure*. Cambridge, MA: MIT.

Christopher, M. (1998). *Logistics and supply chain management. Strategies for reducing costs and improving services* (2nd ed.). London: Financial Times/Pitman.

Dahler-Larsen, P. (1998). What 18 case studies of organizational culture tell us about counter-intentional effects of attempts to establish shared values in organizations. In M. A. Rahim, R. T. Golembiewski, & C. C. Lundberg (Eds.), *Current topics in management* (Vol. 3, pp. 151-173). Stamford, CT: Jai Press.

De Dreu, C. K. W. (1997). Productive conflict: The importance of conflict management and conflict issue. In C. K. W. De Dreu & E. Van de Vliert (Eds.), *Using conflict in organizations* (pp. 9-22). London: Sage.

De Dreu, C. K. W., Nauta, A., & Van de Vliert, E. (1995). Self-serving evaluations of conflict behavior and escalation of the dispute. *Journal of Applied Social Psychology*, 25, 2049-2066.

De Dreu, C. K. W., & Van de Vliert, E. (1997). Introduction: Using conflict in organizations. In C. K. W. De Dreu & E. Van de Vliert (Eds.), *Using conflict in organizations* (pp. 1-7). London: Sage.

Drazin, R., & Van de Ven, A. H. (1985). Alternative forms of fit in contingency theory. *Administrative Science Quarterly*, 30, 514-539.

Fisher, R. J. (1990). *The social psychology of intergroup and international conflict resolution*. New York: Springer-Verlag.

Follett, M. P., Metcalf, H. C., & Urwick, L. F. (1941). *Dynamic administration: The collected papers of Mary Parker Follett* (Edited by H. C. Metcalf and L. Urwick). New York: Harper.

Galbraith, J. R. (1973). *Designing complex organizations*. Reading, MA: Addison-Wesley.

Galinsky, A. D. (1999). *Perspective taking: Decreasing intergroup bias*. Unpublished manuscript.

Gilmore, J. H., & Pine, B. J., II (1997). The four cases of mass customization. *Harvard Business Review*, January-February, 91-101.

Goldratt, E. M., & Cox, J. (1993). *The goal: A process of ongoing improvement* (2nd ed.). Aldershot: Gower.

Goldstein, H. (1995). *Multilevel statistical models* (2nd ed.). London: Edward Arnold.

Goldstein, H., Rasbach, J., Plewis, I., Draper, D., Browne, W., Yand, M., Woodhouse, G., & Healy, M. (1998). *A user's guide to MLwiN*. London: University of London, Institute of Education.

Herzberg, F. (1968). One more time: How do you motivate employees? *Harvard Business Review*, 46(1), 53-62.

Hogg, M. A., & Terry, D. J. (2000). Social identity and self-categorization processes in organizational contexts. *Academy of Management Review*, 25, 121-140.

John, C. H. St. (1991). Marketing and manufacturing agreement on goals and planned actions. *Human Relations*, 44, 211-229.

Johnson, G., & Scholes, K. (1988). *Exploring corporate strategy* (2nd ed.). New York: Prentice-Hall.

Konijnendijk, P. A. (1994). Coordinating marketing and manufacturing in ETO companies. *International Journal of Production Economics*, 37, 19-26.

Kreft, I., & De Leeuw, J. (1998). *Introducing multilevel modeling*. London: Sage.

Lawrence, P. R., & Lorsch, J. W. (1967). *Organization and environment: Managing differentiation and integration*. Boston, MA: Harvard Graduate School of Business Administration.

Majchrzak, A., & Wang, Q. (1996). Breaking the functional mind-set in process organizations. *Harvard Business Review*, September-October, 93-99.

McCann, J. E., & Galbraith, J. R. (1981). Interpersonal relations. In P. C. Nystrom & W. H. Starbuck (Eds.), *Handbook of organizational design* (pp. 60-84). Oxford: Oxford University Press.

Miller, J. G., & Arnold, P. (1998). POM teaching and research in the 21st century. *Production and*

Miller, J. G., & Roth, A. V. (1994). A taxonomy of manufacturing strategies. *Management Science*, 40, 285-304.

Mintzberg, H. (1979). *The structuring of organizations*. Englewood Cliffs, NJ: Prentice-Hall.

Mintzberg, H., Ahlstrand, B., & Lampel, J. (1998). *Strategy safari: A guided tour through wilds of strategic management*. London: Prentice-Hall.

Nauta, A., De Dreu, C. K. W., & Van der Vaart, T. (2000). Social value orientation, organizational goal concerns and interdepartmental problem-solving behavior. Manuscript submitted for publication.

Ouchi, W. (1980). Markets, bureaucracies and clans. *Administrative Science Quarterly*, 25, 129-141.

Parker, S. K., Wall, T. D., & Jackson, P. R. (1999). 'That's not my job': Developing flexible employee work orientations. *Academy of Management Journal*, 40, 899-929.

Peelen, E., Van Goor, A. R., & Den Breejen, R. (1991). *Customer Service als Uitgangspunt voor Distributiebeleid* [Customer service as point of departure for distribution policy]. Leiden: Stenfert Kroese.

Pino, R., & Van 't Eind, S. (1990). Logistiek geeft extra dimensie aan concurrentiestrategie [Logistics gives an extra dimension to competitive strategy]. *Tidschrift voor Marketing*, 24, 62-72.

Porter, M. E. (1980). *Competitive strategy*. New York: Free Press.

Porter, M. E. (1985). *Competitive advantage*. New York: Free Press.

Raudenbush, S. W., & Bryk, A. S. (1986). A hierarchical model for studying school effects. *Sociology of Education*, 59, 1-17.

Rubin, J. Z., Pruitt, D. G., & Kim, S. H. (1994). *Social conflict. Escalation, stalemate, and settlement*. New York: McGraw-Hill.

Schmenner, R. W., & Swink, M. L. (1998). On theory in operations management. *Journal of Operations Management*, 17, 97-113.

Shapiro, B. P. (1977). Can marketing and manufacturing coexist? *Harvard Business Review*, September-October, 104-114.

Sherif, M., & Sherif, C. W. (1953). *Groups in harmony, and tension*. New York: Harper & Row.

Skinner, W. (1974). The focused factory. *Harvard Business Review*, 52(3), 113-121.

Slack, N., Chambers, S., Harland, C., Harrison, A., & Johnston, R. (1998). *Operations management* (2nd ed.). London: Pitman.

Smith, T. M., & Reece, J. S. (1999). The relationship of strategy, fit, productivity, and business performance in a services setting. *Journal of Operations Management*, 17, 145-161.

Snijders, T. A. B., & Bosker, R. J. (1999). *Multi-level analysis*. London: Sage.

- Sparrow, P. R. (1994). The psychology of strategic management: Emerging themes of diversity and cognition. In C. L. Cooper & I. T. Robertson (Eds.), *International review of industrial and organizational psychology* (Vol. 9, pp. 147-181). Chichester: Wiley.
- Tajfel, H. (1970). Experiments in intergroup discrimination. *Scientific American*, 223, 96-102.
- Tajfel, H., & Turner, J. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup conflict*. Monterey, CA: Brooks/Cole.
- Thompson, J. D. (1967). *Organizations in action*. New York: McGraw-Hill.
- Thompson, L., & Loewenstein, G. (1992). Egocentric interpretations of fairness and interpersonal conflict. *Organizational Behavior and Human Decision Processes*, 51, 176-197.
- Tosi, H. L., & Slocum, J. W. (1984). Contingency theory: Some suggested directions. *Journal of Management*, 10, 9-26.
- Turner, J. c., & Giles, H. (1981). Introduction: The social psychology of intergroup behavior. In J. C. Turner & H. Giles (Eds.), *Intergroup behavior* (pp. 1-32). Oxford: Blackwell.
- Walton, R., & Lawrence, P. (1985). *Human resource management trends and challenges*. Harvard: Harvard Business School Press.
- Weick, K. E. (1979). *The social psychology of organizing* (2nd ed.). New York: Random House.
- Westley, F., & Mintzberg, H. (1991). Visionary leadership and strategic management. In J. Henry & D. Walker (Eds.), *Managing innovation* (pp. 40-53). London: Sage.
- Wheelwright, S. C. (1984). Manufacturing strategy: Defining the missing link. *Strategic Management Journal*, 5, 77-91.
- White, R. K. (1977). Misperception in the Arab-Israeli conflict. *Journal of Social Issues*, 33, 190-221.
- Woodward, J. (1965). *Industrial organization: Theory and practice*. Oxford: Oxford University Press.

#### Appendix 1. Factor loadings of the items on organizational strategy

Legend for Chart:

B - Factor 1

C - Factor 2

A	B	C
Efficiency	.17	.87
Quality	.76	-.35
Delivery speed	.78	.22
Delivery reliability	.81	-.17
Flexibility	.49	.38
Customer service	.85	-.12

Note. Principal component analysis was used (no rotation).

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